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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/671,409	09/27/2000	Markus Loose	00SC053US3	6802

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EXAMINER

KAO, CHIH CHENG G

ART UNIT	PAPER NUMBER
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2882

DATE MAILED: 03/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/671,409

Applicant(s)

LOOSE, MARKUS

Examiner

Chih-Cheng Glen Kao

Art Unit

2882

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 12 December 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-3,5,9 and 13-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5,9 and 13-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 22 April 2002 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1, 5, 9, and 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arques et al. (US Patent 4948966) in view of Wilder et al. (US Patent 5262871) and Takahashi (US Patent 5955753).

2. Regarding claims 1, 5, 9, and 15, Arques et al. discloses a photodetector array with at least three rows and columns (Fig. 1) with two active photodiodes (Fig. 1, "Da" and "Db") or subpixels, having an intrinsic capacitance storing the combined or aggregated output prior to being read (inherent), and a first circuit combining the output of the two photodiodes in parallel (Fig. 1, "Da" and "Db").

However, Arques et al. does not seem to specifically disclose a switching circuit to allowing switching between a circuit combining the output of the two photodiodes or subpixels in parallel and a circuit combining one of the photodiodes or subpixels in parallel with a photodiode subpixel of a neighboring pixel to switch between high and low resolutions, or switching between two and three photodiodes or subpixels, along with an addressing circuit to

Art Unit: 2882

enable outputs in response to an address input, and photodiodes or subpixels with outputs switchably connected to a common pixel node.

Wilder et al. teaches a switching circuit to allowing switching between a circuit combining the output of the two photodiodes in parallel (col. 6, lines 7-11) and a circuit combining one of the photodiodes in parallel with a photodiode of a neighboring pixel (col. 6, lines 15-44) to switch between high and low resolutions (Abstract, lines 9-18) along with an addressing circuit to enable outputs in response to an address input (Abstract, lines 1-8).

Takahashi teaches and photodiodes or subpixels with outputs switchably connected to a common pixel node (Fig. 8, #24 and #6).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to have the switching and addressing of Wilder et al. with the device of Arques et al., since one would be motivated to use the switching and addressing to provide lower resolution for higher speed capture as shown by Wilder et al. (Abstract, lines 9-13). One would be also motivated to use the switching and addressing to provide higher resolution to see greater detail.

Secondly, it would have been obvious, to one having ordinary skill in the art at the time the invention was made, to have switching between two and three photodiodes or subpixels with the suggested device of Arques et al. in view of Wilder et al., since where the general conditions of a claim are disclose in the prior art, discovering the optimum or workable ranges involves only routine skill in the art, as implied by Wilder et al. (col. 6, lines 7-9 and 40-44). It would have only been a matter of engineering efficiency to alter between 2, 3, 4, or any multiple of photodetectors, subpixels, or pixels. One would be motivated to combine the photodetectors or

Art Unit: 2882

subpixels, or pixels to merge signals into superpixels to provide high speed data capture as shown by Wilder et al. (Abstract, lines 10-13).

It would also have been obvious, to one having ordinary skill in the art at the time the invention was made, to have the outputs switchably connected to a common pixel node of Takahashi with the device of Arques et al., since one would be motivated to use this arrangement to reduce the number of devices and wirings and reduce manufacturing costs (col. 2, lines 50-56).

3. Regarding claims 13 and 14, Arques et al. in view of Wilder et al. and Takahashi suggests a device as recited above.

However, Arques et al. does not seem to specifically disclose an array switchable between 1920 and 1080 rows or 1080 and 720 columns.

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to have an array switchable between 1920 and 1080 row or 1080 and 720 columns with the suggested device of Arques et al. in view of Wilder et al. and Takahashi, since it would have just been a matter of engineering expediency to choose a resolution that was considered high and a resolution that was considered low. Secondly, discovering the optimum or workable range for resolution involves only routine skill in the art. One would be motivated to have a resolution as high as 1920 rows or 1080 columns for greater detail in the image, while one would be motivated to have a resolution as low as 1080 rows or 720 columns for faster processing.

Art Unit: 2882

4. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arques et al. in view of Wilder et al. and Takahashi as applied to claim 1 above, and further in view of Orava et al. (US Patent 5,812,191).

Arques et al. in view of Wilder et al. and Takahashi suggests a device as recited above.

However, Arques et al. does not seem to specifically disclose FET switches.

Orava et al. teaches FET switches (col. 4, lines 58-67, and col. 5, lines 1-5).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made to have FET switches of Orava et al. with the suggested device of Arques et al. in view of Wilder et al. and Takahashi, since FETs are functionally equivalent to the switches of Arques et al. in that they are both switches. One would be motivated to use FETs to reduce components as shown by Orava et al. (col. 4, lines 58-63).

Response to Arguments

5. Applicant's arguments with respect to claims 1-3, 5, 9, and 13-15 have been considered but are moot in view of the new ground(s) of rejection.

6. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "active pixels, with an amplifier for every pixel") are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chih-Cheng Glen Kao whose telephone number is (703) 605-5298. The examiner can normally be reached on M - Th (8 am to 5 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (703) 305-3492. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7724 for After Final communications.

Art Unit: 2882

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



gk

March 6, 2003

